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REEXAMINING THE PRINCIPLE OF SURPRISE IN 21ST CENTURY
WARFARE

by

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A paper submitted to the Faculty of the Naval War College in partial satisfaction of the requirements of the Department of Joint Military Operations.

The Contents of this paper reflect my own personal views and are not necessarily endorsed by the Naval War College or the Department of the Navy.

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ABSTRACT

The U.S. military has undergone profound changes over the past decades, however the basic principles of warfighting, developed in the late 1900's, remain essentially unchanged. Nevertheless, as we continually revise doctrine and the way we fight wars, particularly in the approaching 21st Century, it is important to review the principles of war in the context of the current military environment. Probably the most affected by the technological and institutional changes in the military is the principle of surprise. Surprise, a vital force multiplier in any military operation, can achieve quick, decisive victory in battle. Therefore its employment will continue to be effective in 21st Century warfare; however commanders must consider the impact of changes in technology and intelligence on achieving surprise; and how secrecy, another vital component of surprise, will be more difficult to maintain in the future. The technological advantages of the United States is diminishing due to technology exchanges, commercial availability of military systems, and gray market activities. Good intelligence analysis is becoming more difficult to achieve in a complex real-time, multidiscipline collection environment. Massive infusions of information increase the fog and friction of war and commanders must quickly and accurately assess intelligence and take risks accordingly. Information warfare provides increased opportunity to deceive through disinformation further complicating the commander's planning. Secrecy is more problematic in an open society with more media access and information exchanges with coalition partners. Surprise, dependent on technological superiority, secrecy and good intelligence, is nevertheless still a viable means of winning wars through quick, decisive operations. The commander must ensure operational security, technological innovation and moral courage to risk offensive action based on carefully evaluated intelligence. Only then can surprise be truly effective.

REEXAMINING THE PRINCIPLE OF SURPRISE IN 21ST CENTURY WARFARE

INTRODUCTION

"The only thing that stays the same is change"

Throughout past centuries, change has influenced the battlefield and the way the US military has waged war. Reasons for military action have evolved from fighting for our nation's independence during the Revolutionary War to ensuring regional stability and adequate oil resources for its friends and allies during the Persian Gulf War. Not only why but how we fight has also been a dynamic process. The way the military has employed its forces has changed significantly to meet the new national security requirements. Military conflicts, once sole domain of the foot soldier, are now fought jointly. Further evolutions in warfighting resulted from the growing interdependency between states and the formation of coalitions on the battlefield; and the revolution in technology which continues to shape the way we fight today. More recently, the military has been involved in new roles, e.g. operations other than war requiring new tactics and doctrine to accomplish assigned missions. The old ways of war; i.e. defeat by total annihilation, use of massive land forces, and unlimited objectives have been overcome by political, technological and doctrinal developments which forced changes in military thinking, force structuring and force employment. Yet in the midst of all the change in the military employment of forces, there has been one constant--the basic principles of war. Since the early 1900's, nine fundamental principles have served as the cornerstones for effective planning and execution of all military operations, large and small, and at every echelon.

The principles of war have been the underpinning that has guided the way we fight wars over the last several decades. Rear Admiral C. R. Brown in his article, "The Principles of War," cautions, however, that the principles of war are not a set of rules that must be strictly adhered to. He contends, on the contrary, that the rules [principles] are guides in formulating a theory of war and, as such, must be critically analyzed on a recurring basis in order to avoid dogma and creative inertia.¹ As we enter the 21st Century--a new era that provides monumental challenges for the US military tasked to support a very ambitious military strategy--the time is right to look at the warfighting principles with a fresh perspective. The principles of war must be carefully analyzed to ensure their continued applicability and relevancy in a very different fighting environment. It behooves all military leaders to consider how change--whether in world affairs, information science and technology, or military doctrine--will affect the use of long-standing principles. The operational commander must understand the principles in today's climate, not how they worked in the "last war."

SURPRISE--A RELEVANT PRINCIPLE IN 21ST CENTURY WARFIGHTING

This paper focuses on the one warfighting principle that will probably be the most difficult to employ in the 21st Century --the principle of surprise which Rear Admiral Brown sees as underlying all other principles of war. It examines the importance of surprise relative to military developments, and addresses issues that will have a tremendous effect on the successful application of this basis tenet of warfighting in future conflict. For one, technological changes in weaponry and C4I, and unprecedented information flow will create bigger challenges for the

¹ Rear Admiral C.R. Brown, "The Principles of War," United States Naval Institute Proceedings, June 1949, 622.

employment of surprise. Also, the new world order and an evolving joint force structure to meet new, emerging post-cold war military requirements will also make achieving surprise in warfare more difficult. And lastly, the media's increasing involvement in military operations and the rise in coalition/joint warfare exacerbate the warfighters efforts to achieve surprise by making operational security more difficult. So is it still possible to create an unexpected situation for which the enemy is not prepared? This paper shows that in spite of an atmosphere no longer as conducive to military surprise as in the 19th and 20th centuries, this bedrock principle is still valid and in some cases more valuable than ever. By examining surprise and its relationship with technology, intelligence, and secrecy, one can discern the operational commander's difficult task of knowing when and how to apply this tried and true principle of war. The key to its continued relevance in future conflicts is to be aware of those elements impacting on its utility--the advantages and disadvantages for surprise in the next century--and to use those same elements to one's advantage.

SURPRISE--A PRINCIPLE OF WAR

What can surprise do for the warfighter and why is it worth studying in the context of today's wars and military operations other than war (MOOTW)? Military scholars and warfighters alike acknowledge the benefits of this critical principle of war. According to Michael Handel, in his book, The Diplomacy of Surprise: Hitler, Nixon, Sadat, surprise is considered a force multiplier that if successfully incorporated into an operational plan achieves the military objective with fewer combat resources. He states furthermore: "As a fundamental part of military planning, it dictates the course of war on the attacker's terms, reduces his

casualties, and improves his chance of achieving victory.”² In view of the military downsizing and the reality of having to do more with less, a force multiplier that can give the abovementioned advantages is certainly worthy of any warfighter’s consideration. The Army in FM 100-5 recognizes the value of surprise as an important characteristic of the offense and initiative. “By striking the enemy at a time and place or in a manner for which he is not prepared,” the commander can achieve surprise and a significant battlefield advantage.³ For example, the large armored thrust that enveloped Iraqi forces during the Gulf War came as a total surprise to Iraqi forces who had been preparing for an amphibious and frontal assault into Kuwait.⁴ Generally speaking, surprise delays the enemy’s reaction, confuses his command and control, imposes serious psychological damage on enemy forces, and reduces the enemy’s cohesion in defense.⁵ Surprise, however, is not only an attribute in ground battles, it has also been incorporated into aerospace doctrine⁶ and has proven its applicability to air operations, e.g. El Dorado Canyon which caught the Libyans totally off guard.⁷ Incorporating surprise into the air strike plan achieved national and military objectives by ensuring a speedy and decisive operation with minimal casualties. The aforementioned illustrations support David Thomas Twining, who in his book, Strategic Surprise in the Age of Glasnost, states “surprise more than any other single principle of the theory of war, permits the *rapid* attainment of decisive results in the initial stages of war.”⁸ This means of achieving quick results, particularly after the Vietnam

² Michael I. Handel. The Diplomacy of Surprise: Hilter, Sadat, Nixon (Cambridge: Harvard Center for International Affairs, 1981), 15.

³ FM-100-5, Operations, (Washington D.C.: of the Army, 1993), 7-1.

⁴ Conduct of the Persian Gulf War, an Interim Report to Congress. July 1991. 24-1.

⁵ *ibid.*

⁶ Air Force Manual 1-1, Volume II, Basic Aerospace Doctrine of the United States, (Washington D.C.: Dept of the Air Force, 1992) 13.

⁷ DTIC, p. 32.

⁸ David Thomas Twining, Strategic Surprise in the Age of Glasnost, (New Jersey: Transaction Publishers, 1992), p. 55.

experience, not only satisfies political and military objectives, it also has the support of the third leg of the Clausewitzian trinity--the American people.

Applying surprise may appear a relatively easy task on the surface, however, its success in battle rests on numerous factors. The above examples reflected the use of speed, secrecy, and technology; however, other operational variables influencing the success or failure of surprise include intelligence, tactics, doctrine, behavior and a certain degree of luck.⁹ Knorr and Morgan in Strategic Military Surprise, look at four capabilities which they believe must exist in order to inflict c. The first is informational--in other words, one must have good intelligence to determine the optimum scenario for achieving surprise; secondly, the political/military leadership must be willing to make risky decisions; thirdly, the military must have the necessary means for reaching the objective; and lastly, maintaining secrecy and deception to hide the intentions and plans, and actively mislead the victim.¹⁰ These requirements overlap with the military service's individual lists of prerequisites for achieving surprise. For instance, AM 1-1 identifies "speed, alacrity, employment of unexpected factors, effective intelligence, deception operations..., tactics and methods of operation, and operations security"¹¹ as contributors to surprise. While it is easy to list the elements of surprise, the key to remember is that all of these factors are continually being effected by external influences, and depending on the situation may or may not be achievable. In today's environment, for example, it may be easier to employ speed. The Toffler's, in their book, War and Antiwar, attribute the astonishing rate of speed by which allied ground forces attacked Saddam's troops to computers, telecommunications, and satellites.¹² On the other hand, this vast

⁹ *ibid.*, p. 60.

¹⁰ Klaus Knorr and Patrick Morgan, Strategic Military Surprise, (New York: National Strategy Information Center, Inc: 1983), 195-196.

¹¹ AFM 1-1, 13.

¹² Alvin and Heidi Toffler, War and Antiwar, (New York: Little, Brown and Company, 1993), p. 79.

array of technological infrastructure makes maintaining secrecy far more challenging. So in examining surprise, it is more important to look at the individual ingredients that produce surprise, and to determine how the 21st Century will impact these disparate yet integral components.

TECHNOLOGY AND SURPRISE

"What we have set in motion is an entirely new era in warfare...What is changing is the very nature of modern battle" -- Chairman, Joint Chiefs of Staff¹³

The impact of current technology bring both opportunities and challenges to all facets of the military, including our basic warfighting principles. The new era of technology, so clearly exemplified in Desert Storm, has profoundly affected surprise--positively by offering revolutionary ways to stun the enemy into inaction but also by increasing the "fog of war" and decreasing available warning time. Stealthy air strikes against Iraqi targets provided the Iraqi's no time to initiate defensive measures. Certainly the advancements in weapons systems, e.g. precision-guided munitions; satellites, e.g. global positioning and remote sensing; and information/communications systems; and the resultant technological superiority which the US currently enjoys, offer the military a greater selection of tools that can produce surprise. On the other hand, today's technology proliferation gives the adversary the opportunity to obtain and use the same technologically advanced systems; e.g. stealth platforms, communications and intelligence satellites, against the US. According to the Toffler's, software is changing military balances throughout the world.¹⁴ By equipping high-tech software on cheap, low-tech platforms,

¹³ General John C. Shalikashvili quoted in Bradley Graham, "Battle Plans for a New Century," The Washington Post, 21 February 1995, 1:3.

¹⁴Toffler, 144.

adversaries anywhere can significantly enhance their warfighting capability without much notice. Arms transfer via black market or gray markets make it very difficult to know who has what. Iraq or Libya, for example, could procure system components or agents/precursor materials for nuclear, biological or chemical weapons (NBC), and effectively adapt them to existing indigenous weaponry. Technological surprise is normally associated with the development and first-time employment of a new weapon system against an unsuspecting adversary, however as Dr. George Heilmeier points out technological surprise can be achieved by using old weapons that have been upgraded with new technology or by employing old systems in new ways.¹⁵ In the Falkland War, for example, the Argentineans employed a new air-launched version of the Exocet missile for which the Royal Navy was technically unprepared. Although familiar with the Exocet, the Brits were not expecting the new low-flying missile with a much longer range¹⁶ and lost a ship in the process. The notion of using an old system in new ways is a growing problem. In congressional testimony, Dr. John Deutsch, Director of Central Intelligence, articulated CIA concerns with NBC proliferation and the lack of information on their potential employment by small terrorist organizations.¹⁷ Technology gives the enemy the same impetus to improve its weapons arsenal with new systems or by merely upgrading old indigenous equipment. Oliver Morton sums it up this way: "Without matching America's might, fighting it on the battlefield would be unwise. Potential aggressors are more likely to look at ways to wage war differently, including ways that allow the new technology its head."¹⁸ So while the US with

¹⁵ Dr. George H. Heilmeier, "Guarding Against Technological Surprise," Air University Review, Fall, 1976, 2.

¹⁶ Martin Middlebrook, Task Force: The Falklands War, 1982, (London: Penguin Books, 1987), 159.

¹⁷ Tim Weiner, "U.S. Vulnerable to Terrorist Chemical Weapons," The New York Times, March 21, 1996, A5.

¹⁸ Oliver Morton, "Defense Technology: The Information Advantage," The Economist, June 10, 1995, 7.

its current technological superiority can achieve surprise, the enemy is more capable of having the same advantage. Intelligence is one way to ensure capabilities are not underestimated.

INTELLIGENCE AND SURPRISE

Knowing the place and time of the coming battle, we may concentrate from great distances in order to fight. But if neither time nor place be known, then the left wing will be impotent to succor the right, the right equally impotent to succor the left, the van unable to relieve the rear to support the van...(Sun Tzu)

Timely and accurate intelligence analysis and dissemination is the panacea for achieving surprise or precluding surprise. A sterling example occurred the night of 29 March 1941 when Admiral Cunningham, with advanced warning from Bletchley Park, which had penetrated Italian naval codes, thwarted Admiral Iachino's intentions to intercept the British naval forces en route from Africa to Greece. Armed with the foreknowledge, Admiral Cunningham surprised the Italian task force and won a significant naval battle.¹⁹ In the 21st Century, operational commanders will rely on intelligence in order to achieve the same successes in the battlespace, however the burden on intelligence will be greater. First, this century brings new intelligence requirements to the table. In addition to the essential elements of information traditionally supporting the warfighter, e.g. order of battle, plans and intentions of potential enemies, national leadership has tasked the intelligence community to support counternarcotics, counterterrorism, and illegal technology trade.²⁰ Sorting through the vast amounts of data and correctly analyzing varying bits of information to determine the adversary's next tactical, operational, or strategic

¹⁹ Michael Handel, "Intelligence and Military Operations," Intelligence and National Security, April 1990, 40.

²⁰ A National Security Strategy of Engagement and Enlargement, February 1995, 18.

move is going to be increasingly difficult and inordinately time-consuming. To preclude surprise, commanders need to know not only what the adversary has in his military tool bag but also how far he is willing to go to employ these systems and what his long-term and short-range military objectives are. In particular, gaining strategic intelligence, such as weapons research and development activities, systems' inventories or an enemy's national military objectives--all critical to the commander in determining enemy courses of action (COA)-- will be challenging at best. One of the toughest assignments for the intelligence community today and in the future is in the area of CBW proliferation--a top concern identified in the national security strategy of the United States. Terrorist organizations and rogue nations can take the initiative and attack with virtually no warning. Battlefield or situational awareness will become more critical in a multidimensional threat environment at the operational and tactical levels of war, and new intelligence capabilities like the joint-STARS imaging radar ground surveillance currently monitoring Bosnian territories, are positive enhancements for the traditional battlefield.²¹ These systems, however, are helpless against the new and growing unconventional threats.

But not only the "what" of intelligence is changing; "how" one collects and disseminates intelligence is going to be dramatically impacted by the plethora of raw data resulting from new information technology and advancements in satellite and air breathing platforms. In order to be meaningful to the operational commander, or national-level decisionmakers, collected information must be fused, analyzed and assimilated into timely and telling products. Fortunately, current technology is paving the way for more rapid, dissemination of all-source products via softcopy to all levels of command. "New technologies are being introduced

²¹ Craig Covault, "Joint Stars Patrols Bosnia," Aviation Week and Space Technology, February 19, 1996, 44.

regularly, and initiatives have been taken to reduce the number of duplicitous systems, eliminate stovepipe architectures and increase systems interpretability.²² The Joint Worldwide Intelligence Communications System (JWICS), for example, can support present and future requirements for interactive multimedia intelligence communication and affords the combatant and JTF commanders access to a wide range of intelligence support. Having a centralized communications structure for intelligence dissemination may avoid intelligence failures where information was available albeit not fused into a meaningful all-source intelligence package. Prior to the invasion of North Korea, for example, General MacArthur's staff received 1200 reports that an attack from the North was imminent and was still caught off-guard.²³ Professor Handel points to Pearl Harbor as another example where surprise could have been avoided if an experienced centralized intelligence organization could have pulled all available information together.²⁴

As the intelligence apparatus become more sophisticated, the military customer will have a more difficult job understanding the collection capabilities, knowing how to tap in to all available resources for complete and accurate information, and evaluating the information presented. The fact that the new information age holds considerable potential for deception makes the task even tougher. "Not only will technologically advanced militaries be able to identify, define and exploit an adversary's indications and warning networks, they may be able to influence an adversary's perceptions."²⁵ Although seemingly more difficult, the commander

²² Joint Pub 2-02, National Intelligence Support to Joint Operations, 1st Draft, 10 April 1995, IX-1.

²³ *ibid.*, p. 81.

²⁴ *ibid.*, p. 55.

²⁵ William Johnson and others, The Principles of War in the 21st Century: Strategic Considerations, Carlisle: Dept of the Army, pulled off the Internet.

must also have the courage to act on information provided. As mentioned earlier, acquiring information about the enemy's intentions must be accompanied by the political will *to act upon* the information. Risk-taking, as suggested by Professor Handel, is essential for overcoming predictability by increasing it for the enemy.²⁶ As the fog of war increases commensurate with the infusion of information, the commander cannot expect black and white solutions. Judgment will become even more important than in previous decades of warfighting. Consider an infantry division commander during the Civil War. His reconnaissance scout reports enemy troops over the next ridge--a rather straightforward situation. The commander either withdraws or takes the initiative and attacks first. In 21st Century warfare, the scenario is decidedly more complex. For example, a joint task force commander is about to launch a surprise attack consisting of numerous air strikes against predetermined targets with a concurrent marine amphibious landing. Multiple technical sources confirm no enemy movement at the landing site during the past 12 hours, however a late breaking human resource (HUMINT) intelligence report suggests the enemy is aware of the impending marine assault and ready to counterattack. Meanwhile no unusual enemy communications or other indicators of hostile intent are evident. Does the JTF commander proceed with his operational plan? Although not an easy decision to make, a very likely scenario in an age of multi-discipline intelligence. The commander must weigh the products resulting from glitzy technological advancements--products that offer a better picture of physical attributes and movements of the enemy--against HUMINT reporting that offers insights into the enemy's thought process, plans or intentions. He must also ask whether or not the enemy is using a feint or disinformation. One can even take this scenario a step further if one

²⁶ Michael Handel, Intelligence and Military Operations, 16.

considers the way the US will fight future wars--namely with coalition forces. Suppose a coalition partner offered additional information that indicated one of the air strike targets was misidentified. Does the JTF commander change the target set? A difficult question made easier only with timely, all-source intelligence that provides the commander the necessary data to make the required operational decision. The commander must evaluate his information and have the courage to decide quickly, taking the initiative to achieve the ultimate goal of surprise.

SURPRISE AND SECRECY

With over 100 million computers inextricably tying us all together through the most complex array of land and satellite based communications systems...government and commercial computer systems are so poorly protected today that they can be essentially considered defenseless. An electronic Pearl Harbor is waiting to happen.

(Winn Schwartau, Communications Consultant)²⁷

Maintaining secrecy during the planning and execution phases of military operations is going to be significantly hampered by 21st century technologies and easier access to military information. According to Duane Andrews, former Assistant Secretary of Defense for C3I, the United States information security, operational security and communications security is atrocious.²⁸ Information is becoming more vulnerable as friends and foe alike understand that knowledge is power. A new breed of "knowledge warriors" that believes knowledge can win wars has emerged."²⁹ The challenge is to capitalize on knowledge while denying the same to the

²⁷ Quoted in Toffler's War and Anti-War, 149.

²⁸ Toffler, 149.

²⁹ *ibid*, 139.

enemy, however, the defense of our knowledge assets, potentially vulnerable to attack, is becoming extremely more difficult. As Oliver Morton points out, one enemy nuclear device exploded in orbit could eliminate a major part of the US satellite system on which most command, control and communications depends.³⁰ The military services, recognizing this emerging threat, have all embarked on a new type of warfare--command and control warfare³¹--to protect C3 capabilities and preserve our knowledge superiority.

Unfortunately, information technology is not the only "tech" currently proliferating. In this era of "engagement and enlargement," technology-sharing and the unprecedented release of defense technology affords the enemy access to new means. Encryption devices are now widely available worldwide. The fact that any potential adversary can purchase good encryption gear means their ability to maintain secrets from the United States rises significantly.³² Imagery satellites, once the sole domain of the military, are also commercially available, and giving the enemy "eyes" to detect military actions. France, India, Japan, and Russia have remote sensing capabilities and can sell high quality images at will.³³ The US can exercise the option to request that foreigners not release satellite images, albeit with significant security risks. To justify the request, the US may have to reveal military plans thereby jeopardizing military operations.³⁴

Throughout military history, the most successful operations employing surprise were based on secrecy. The extreme importance placed on during the Suez Crisis was key to Israeli success. By limiting access, i.e. 90% of the General Staff did not know what was going on and

³⁰ Morton, 11.

³¹ Joint Pub 6-0, Doctrine for Command, Control, Communications, and Computer (C4) Systems Support to Joint Operations, 30 May 1995, GL-5.

³² Morton, 18.

³³ Edwin C. Swedburg, Major, USAF, "The Effect on Operational and Tactical Surprise by U.S. Military Forces Due to the Proliferation of Unclassified Satellite Imaging Systems," Unpublished Research Paper, Army Command and General Staff College, Ft. Leavenworth, Kansas, 6-7.

³⁴ *ibid*, 18.

only four men in each Regional Command were privy to the operational plans,³⁵ Israel pulled off a major coup. In Woodward's The Commander's, President Bush directed minimum knowledge on Operation Just Cause. To ensure compliance, General Powell told General Kelly: "I don't want an order published. I want you to just call people on the [secure] phone."³⁶ Limiting access within DoD and foreknowledge to the media allowed US forces to capitalize on surprise. In the future, however, keeping secrets will become harder. The reporter will have more timely knowledge of the battlespace due to accessible satellite imagery and miniaturization of equipment more adaptable to battlefield conditions. Dan Rather states: "...the exploding world of new, smaller, better technology, has ramifications wide and deep for how much and how little control any commander has over what is and is not covered."³⁷ Also, with the growing military cooperation between allies, information-sharing rises commensurately. Clearly the commander's ability to plan and execute missions in secrecy is being threatened by a number of external factors that can only be combated with better operational security. As Duane Andrews statement, quoted earlier, suggests, the U.S. needs to do a better job protecting its technology and its operations. Fortunately, national strategy is focusing on enhanced counterintelligence, and legislation is being sought to protect "military secrets."³⁸ The previous paragraphs point out how technology and intelligence offer new challenges when considering courses of action; however, of all the ingredients necessary to maintain surprise in warfare, secrecy could be the most difficult aspect in the 21st Century.

³⁵ Yegiel Sheffy, "Unconcern at Dawn, Surprise at Sunset: Egyptian Intelligence Appreciation Before the Sinai Campaign, 1956," Intelligence and National Security, July 1990, 38.

³⁶ Bob Woodward. The Commanders. (New York: Simon and Schuster, 1991), 171.

³⁷ Dan Rather, "Honest Brokers of Information," Naval War College Review, Autumn 1995, 39.

³⁸ Kenneth E. deGraffenreid, "Statement," Senate Select Committee on Intelligence, The Counterintelligence Improvements Act of 1990, Hearings (Washington: US Govt Printing Office, 1990).

CONCLUSION

"Superior equipment, ...surprise...,superior soldiers"—General Powell

Operation Just Cause was designed to ensure a quick, decisive victory with the ways and means quoted above. The US military, while currently having the technological advantage in equipment and the best trained forces in the world, must have commanders who, like General Powell, continue to value the principles of war to be just as vital to success as hardware and people. The way we fight wars will continue to evolve in the future and the principles of war must be looked at in the context of the changing military conditions. Unlike past conflicts that required massive mobilization readily discernible to the opposition, operations of the future will more than likely involve small, mobile land forces and air-only strikes that can more effectively employ strategic and operational surprise. Stealth aircraft launched from the continental United States, exercising speed, secrecy and armed with on-board real-time intelligence, will offer little, if any, warning that attack is imminent. "Decoys and electronic countermeasures will transform stealth from a way of withholding information to a way of spreading disinformation."³⁹ These new deception capabilities will offer other ways to surprise the adversary. So while the principle of surprise, resting primarily on superior technology, good intelligence, and maximum secrecy, may face growing constraints, it also can take advantage of new opportunities in the coming century. The commander can still effectively achieve surprise by taking advantage of the weapons and information technology; by exercising moral courage by acting on intelligence information; and by employing information and operational security in all phases of operational warfare.

³⁹ Morton, p. 16.

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